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# HIGHER PRELIMINARY MEDICAL EDUCATION.

THE INFLUENCE OF THE GERMAN UNI-  
VERSITIES UPON OUR PROFESSION.

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AN ADDRESS DELIVERED BEFORE THE  
AMERICAN ACADEMY OF MEDICINE,

**December 4th, 1890.**

AT THE COLLEGE OF PHYSICIANS,

***Philadelphia.***

BY HENRY E. DWIGHT,

1852	1855	1857	1867	1882
A.B.	A.M.	B.D.	M.D.	D.D.
Uv. Yale.	Uv. Yale.	Andover.	Uv. Penn.	Uv. Wash. and Lee.

Member of the Universities of Berlin, (*cum laude*) 1862; Halle, 1862; Paris, 1863. Physician to the Philadelphia Hospital, *interne*, 1866-7; *externe*, 1867-77. Member and Director of various European and American Medical Societies.

PRINTED BY REQUEST OF THE AMERICAN ACADEMY OF MEDICINE.  
(D. J. MARCHANT, STENOGRAFHER, PHILA.)

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Annual Meeting, December 3 and 4, 1890, at Philadelphia, Pa.

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ON motion of Surgeon Albert L. Gihon, A.M., M.D., United States Navy,

"That the thanks of the American Academy of Medicine be presented by its President, Samuel J. Jones, A.M., M.D., LL.D., of Chicago, to Dr. Dwight, for his able and interesting address, and that a copy be requested for publication."<sup>12</sup>

Unanimously carried, and presented by President Jones.



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HIGHER PRELIMINARY MEDICAL EDUCATION. THE INFLUENCE OF THE GERMAN UNIVERSITIES UPON OUR PROFESSION.<sup>1</sup>

By HENRY E. DWIGHT.

FROM the Minutes of the Council, I extract the following authority for the selection of my subject, and its presentation at this meeting of the Academy, by request of the committee.

"In accordance with the leading objects of our organization, the education of the physician both preliminary and technical; the relations of the profession in this country to that of other countries, and the elevation of the literary, scientific and social standing of the profession, are especially appropriate 'subjects.'"

In view of the fact that the constitution was altered at the last annual meeting so as "to admit, in addition to those possessing the degree of A.B. and A.M., those who can present evidences of preparatory liberal education equivalent to the same"—the subject proposed in the following paper is of *vital importance* at this meeting of the Academy.

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<sup>1</sup>An address delivered before the American Academy of Medicine, December 4, 1890, at the College of Physicians, Philadelphia.

## SUBJECT.

*Influence of German Universities upon the Medical Profession.*

I. *What is a University?* It is one thing in America, another in England, and something else in Germany. Hence the importance of a clear definition. The University of London has no teachers, no scholars, no buildings, except a room in the Burlington House, no libraries, no laboratories, and yet it has a brilliant staff of professors in the scientific and medical department. It is simply the Napoleonic University of France, without the principle of teaching. Why not, therefore, have a university without teachers, in this age of printing of many books on every subject? Because, the mind, the voice, the eye of the living instructor is as necessary to-day as in the days of the Athenian Agora, or Academia, with Plato, Aristotle, Socrates, and their pupils. In Germany, by these means, Hegel, in philosophy; Dorner, in theology; Hoffman, in chemistry, and Von Virchow in physiology, have been equally successful.

Hence a university is a body of instructors, teaching the highest knowledge, of the most worth to men, dealing with their dearest interests, appealing to their finest powers and noblest feelings.

To aid them in this blessed work let the university prescribe certain courses, and what rewards shall follow a complete and thorough training; and not for these alone, but let them arrange for those who thirst

for knowledge, and earnestly desire the best sources, who should be welcomed to lectures suited to their needs, just as hungry souls pass through church doors always open to satisfy their wants.

Therefore, universities must teach, must vivify knowledge, by appeals to the discursive reason and the creative imagination. But they must do more—among the services they render when rightly conducted, is the prosecution of scientific research into facts imperfectly examined. True teachers are always progressive, and not content with imparting the conclusions of others. They are investigators for testing the observations of their predecessors, while reaching their own conclusions. In the natural sciences, they will observe phenomena, collect and classify observations, draw inferences and force nature to give up her secrets by experiments. Among the greatest teachers in science a large number have been and are now, discoverers.

In such an institution, famed for its teachers, and its original researches, a young student in medicine escapes exclusiveness, because the methods of one science are corrected by those of another. In such an atmosphere, theologians and mathematicians are not intolerant of the votaries of natural science. The student sees a host of men, eminent in genius and industry, who enlarge his horizon by bearing her torch into abstruse paths of knowledge, to masterpieces of thought and feeling which bear fruit in his own mind through life. Hence the catholicity of his views, the

elevation of his feelings and the success of his pursuits.

*II. But What Claims Have the German Universities on our Peculiar Attention To-day?* Montesquieu, in his *Spirit of the Laws*, declared that the English Constitution is found in the forests of Germany, which is abundantly confirmed by Tacitus, and in later days, by Palgrave Kemble and Sir Henry Maine. English customs and laws migrated with the Pilgrims to America. The Germanic system of common fields was revived as commons, or town lands, in New England. The Saxon Hege, warden of the hedge, was the pound-keeper of the United States. In the Mayflower's cabin was representative government, and in the Pilgrim's soul there was reverence for law, to be maintained in a legalized organized town, with a church for God's worship and a seminary of learning for man's welfare, on which rested the institutions of a new world. Hence, Harvard and Yale are each the legitimate offspring of Teutonic ideas and German ideals—the “Alma Mater” of a numerous family.

*German universities* are controlled by the idea that *national unity* depends on *national culture*; that the *powers* that be are ordained of God; and that *rulers* are to be obeyed if they consecrate their *power* to the *welfare of the whole people*. The instruction is by means of lectures and the discussions are conducted by the professors. With the highest instruction in theory, are combined laboratories, clinics and the

best apparatus for observation and experiment, to secure practical instruction. Diligence and scholarship are rewarded by degrees which the student must have before he can graduate or enter a profession. *Our colleges* are stepping-stones, like their *gymnasia*, to a university. We have no institution which the Germans will recognize as a university, and they have none which an intelligent American would recognize as a college. *Their high schools*, with a six years' course, furnish a general education, not a liberal one, and are designed to prepare students for business life. The school for liberal education is the *gymnasium*, with a nine years' course, which pupils begin at nine years of age. Linguistic and historical studies are the peculiar principles of the *gymnasium*, and as the Minister of Education, Von Gosler, officially declared in 1882, "are designed to prepare for independent study at the University."

*The Real Schools*, the rivals of the *gymnasia*, have received their inspiration from the people, and were promoted by progress in natural science, industrial pursuits, and in realism, instead of idealism. They emphasized modern languages, history, mathematics and natural science. The *real* was to be secured by the *Real Schools*. But German scholars are not prepared to sever scholarship from the ancient classics, to take in their place the modern languages, or translations of the ancients; and the German government prefers the *gymnasium*, for every position in its gift is accessible to its graduates. German physicians are

not ready for such a change, for out of one hundred and sixty-three medical societies only three gave their unqualified consent for the admission of students in the Real School to the university medical department. There are serious complaints by the German government, respecting the efficiency of their medical students, and fear lest the change in the standard of admission to the university medical department might lower the standard of scholarship. They favor an increase of the study of medicine from four to five years to secure better preparation for the faculty.

The testimony of that eminent chemist, Professor A. W. Hoffmann, Rector of the University of Berlin, is very important to all liberally educated physicians. He is certainly one of the ablest instructors in that great university, and means what he says, viz. :—

“ That all efforts to find a substitute for the study of the Ancient Classics, whether in the modern languages, mathematics, or natural sciences, have thus far proved a failure. How often have I heard young men prepared in Real Schools deeply regret that they had not enjoyed the training of a gymnasium. The ideality of academical study, the unselfish devotion to science as science, the free exercise of thought, the condition and result of this devotion, recede in proportion as the classic basis, as training for the university, is withdrawn. I have had much occasion to speak of this matter with friends devoted to physics and mathematics, and, with scarcely an exception, I found they had the same conviction.”

These are strong words and merit careful consideration. Similar testimony, as to the value of a classical education, has been given by Liebig, the father of agricultural chemistry; Wolff, Henneberg, Knap, Nobbe, Stohmann, Kühn, and others, all of whom are well-known chemists and discoverers in Germany.

*III. Does the History of Medicine Confirm these Claims?* Are we members of a learned profession? Should we rank with lawyers and theologians on University Catalogues? Have we a scientific profession? These are important questions in America as well as in Germany. Let us see.

Homer mentions two physicians, Machaon and Podalius, skilful in staunching wounds and relieving pain. The story of Aesculapius proves that as far back as legendary history, men made disease and the healing art a special study, and lived by the practice of their craft; but their observations and theories were worth little, because their philosophy was so crude. The labors of Hippocrates are constantly marred by his identification of effect with cause, restrictions placed on the dissections and undeveloped collateral science; still, his work is a monument of unwearied industry and wonderful fidelity to nature. The signs of facts, for the facts themselves, or effects taken for causes, ruined every system of nosology from Hippocrates to Cullen.

There was no sound anatomy or physiology to solve the problems of the diseased system, and not until the *analytical method* of the Alexandrine School

pointed to dissection and unlocked the human frame, did true light reveal the phenomena of disease. Herophilus, their most celebrated teacher, made six hundred dissections, and acquired such authority that the proverb remains to this day: "To contradict Herophilus is to contradict the Gospel." But the famous fire at Alexandria destroyed his researches with the library, but not the principles which they discovered, for Philinus, his disciple, left the most important system of early medicine. Philinus urged a return to observation and clinical studies, and was surrounded by a host of observers, among whom was the celebrated Heraclidus of Tarentum, who first introduced opium into practice.

*So far scientific medicine is confined to a university—Alexandria, with its literary treasures and learned men.* Let us pass from the East to the West, from Egypt to Italy. Pliny assures us that the Roman people had been without a physician for six hundred years. In some things the world is not wiser now than at that period. Then people resorted to certain temples, even in the severest epidemics, as now to the shrine of St. Vitus, where the "faith cure" had its most numerous disciples as well as victims. St. Ossifyga cared for the growth of bones at Rome, just as St. Ursula now cares for them when dead in the Church of the Eleven Thousand Virgins at Cologne.

In Rome, and at this epoch, appeared the Elder Pliny, who collected in his *Historia Mundi* all the systems from Hippocrates to his own, and has left in his

history many original views and reflections, as evidence of the profound mind of a great naturalist.

From Pliny to Galen, the inquiries multiplied exceedingly, because Galen revived the principles of the great physician of Coos, and held undisputed sway in medical matters till the sixteenth century. Devoted to anatomy and physiology, especially the former, his authority became as infallible in medicine as that of Aristotle in philosophy. With Galen, early medicine lost its greatness, and with the downfall of the Roman empire it retrograded likewise, but during the history of that empire, so far as progress was made in the principles and practice of our art, it was on a *scientific* basis. *Æsculapius* was enthroned "at Rome, and not at Canossa."

The age of Dante was the period of the renaissance, when science was divorced from superstition and charlatanism. The first modern dissection of the human subject was made by Mondini di Luzzi, towards the close of the sixteenth century, when the tone of the European mind influenced art as well as medicine. But the public authorities censured Mondini, and dissections ceased. In the seventeenth century, Vesalius resumed them, and laid the foundation of modern anatomy. The purity of his intentions, and his noble views, removed popular prejudice, which enabled Ambrose Paré first to turn to practical use the labors of his predecessors, and, as surgeon to several European sovereigns, by systematizing the researches of his predecessors, lay the foundations for the structure

rared by John Hunter, Dupuytren, Abernethy, and Sir Astley Cooper. During the eighteenth and nineteenth centuries, such stars of the first magnitude as Morgani and Scarpa in Italy; Haller, Böerhave, Heister, and Sömmering, in Germany; Dupuytren, and the illustrious Bichat, in France; Cullen, and the Hunters, in England; all eminent physicians and surgeons, continue the work of scientific research in medicine and science, based on facts and not on theoretic principles, in a field of inquiry commensurate with the three physical kingdoms of nature.

Surely, *the Germans have not erred* in their estimate of a classical and scientific training for a physician up to the nineteenth century, if the history of our profession means anything in the development of the race.

What shall I say of *our* century, now drawing to a close? How the labors of our predecessors pale before the wonders of the nineteenth century! Physical examinations, chemical tests, microscopical histology, anaesthetics in surgery, have certainly elevated medicine to a science, and its practitioners to the front rank of her votaries, entitled to the respect and gratitude of all enlightened men. Every tissue of the body is under the microscope, all living organisms are the products of elementary cells, so that every difference of structure implies a difference of function. Thus we mount from the simple cells to the marvelous structure, man, the paragon of animals, the beauty of the world. Under the careful study of the German Köl-

liker, the liver is revealed as a complex and beautiful structure, symmetrical in design, with an arrangement of lobules, cells, nerves, and blood-vessels, worthy of the warmest admiration, not simply to make bile, but to repair the waste of nerve tissue.

No less, the eye, when under the microscope, bears the happiest results. The discovery of the retinal expansion of the optic nerve, or Jacob's membrane, has wonderfully elucidated the phenomenon of vision. Those nerve fibres are specially fitted to the undulations of light. What a change in our theories of color vision!

Anæsthetics have robbed surgery of all its cruelty and half its danger, extended its sphere of action, increased the proportion of recoveries after severe wounds and mutilation, and insured the safety of obstetrics. Within fifty years the operation of stone will probably become obsolete. Small-pox is no longer a possible danger to life. Typhoid fever is rarely fatal, and typhus is almost unknown, except in the wake of armies or famine. Madness is now a curable disease, and the drugs employed are less loathsome than the disease. Fluid extracts and active principles take the place of nauseating powders and tinctures.

*The causes of disease* are more thoroughly studied and better understood. From a cold in the head to pulmonary phthisis, from lupus to cancer, bacillus is the password, no matter what may be the "grippe." Query? Is the bacillus the cause or a consequence of

the disease? Let that star of the first magnitude, now in the zenith of Berlin, so guide our wise men, about to visit him from the East, that we may all have a quick deliverance from *the scourge of mankind!*

Mr. President, and Fellows of the Academy! I thank you for your patient attention. May I ask for your careful consideration?











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